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*Chrysomitris pinus* Bonap. (Pine Finch), very abundant. 9 spns.  
*Poecetes gramineus* Baird (Bay-winged Finch), common. 3 spns.  
*Zonotrichia albicollis* Bonap. (White-throated Sparrow), abundant. 6 spns.  
*Junco hyemalis* Sclat. (Snowbird), common. 2 spns.  
*Spizella pusilla* Bonap. (Field Sparrow), common. 2 spns.  
*Spizella socialis* Bonap. (Chipping Sparrow), common. 2 spns.  
*Melospiza melodia* Baird (Song Sparrow), common. 2 spns.  
*Melospiza palustris* Baird (Swamp Sparrow), rather common. 1 spn.  
*Cardinalis Virginianus* Bonap. (Redbird), common. 6 spns.  
*Pipilo erythrophthalmus* Vieill. (Chewink), common. 3 spns.  
*Agelæus phœniceus* Vieill. (Red-winged Blackbird), not common. 1 spn.  
*Sturnella magna* Sw. (Meadow Lark), not common.  
*Cyanura cristata* Sw. (Blue Jay), common. 4 spns.  
*Corvus ossifragus* Wilson (Fish Crow), not common.  
*Tyrannus Carolinensis* Baird (King Bird), arrd. April 4, common. 1 spn.  
*Sayornis fuscus* Baird (Pewee), common. 5 spns.  
*Ceryle alcyon* Boie (Belted Kingfisher), rare.  
*Picus villosus* Linn. (Hairy Woodpecker), rare. 1 spn.  
*Picus borealis* Vieill. (Red-cockaded Woodpecker), rare. 1 spn.  
*Sphyrapicus varius* Baird (Yellow-bellied Woodpecker), common. 4 spns.  
*Melanerpes erythrocephalus* Sw. (Yellow-bellied Woodpecker), not common. 1 spn.  
*Colaptes auratus* Sw. (Yellow-shafted Flicker), common. 2 spns.  
*Hypotriorchis columbarius* Gray (Pigeon Hawk), rare. 1 spn.  
*Tinnunculus sparverius* Vieill. (Sparrow Hawk), not common. 1 spn.  
*Cathartes aura* Illig. (Turkey Buzzard), common. 1 spn.  
*Cathartes atratus* Lesson (Black Vulture), not common.  
*Zenædura Carolinensis* Bonap. (Common Dove), common. 2 spns.  
*Ortyx Virginianus* Bonap. (Common Quail), abundant. 1 spn.  
*Butorides virescens* Bonap. (Green Heron), not common. 1 spn.  
*Ægialitis vociferus* Cassin (Kildeer), not common.  
*Philohela minor* Gray (American Woodcock), rare.  
*Tringoides macularius* Gray (Spotted Sandpiper), not common.

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## BOTANICAL OBSERVATIONS IN WESTERN WYOMING.

BY DR. C. C. PARRY.

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No. 1.

HAVING been connected with the exploring expedition of Captain W. A. Jones into Northwestern Wyoming during the past season (1873), the botanical results have proved of such unexpected interest that I have obtained the permission of Captain Jones to anticipate the more detailed official report by preparing for immediate publication a brief sketch of the general botanical features of the region passed over, with notices of rare plants and descriptions of new species collected on the route.

FORT BRIDGER TO CAMP BROWN. Leaving the point of rendezvous at Fort Bridger on the 12th of June, our route followed a

northeasterly course over Green River basin, thence skirting along the southern spurs of the Wind River range. The main continental divide was crossed at South Pass. From this point following a more direct northerly course we reached Camp Brown in the Wind River valley on July 1st.

The chief botanical interest on this portion of our route was comprised in the many suggestive associations with the early discoveries of Nuttall nearly forty years previous. Though this route has been repeatedly traversed by exploring parties, lying in fact on the well-beaten track of western emigrant travel previous to the construction of the Pacific Railroad, not a few of the plants then collected and described have remained up to this time *desiderata* in herbaria.

Unusually copious spring rains previous to our journey had freshened the vegetation of these usually arid tracts, so that our necessarily slow and tedious marches, encumbered by a heavily laden wagon train, were enlivened (at least to the botanist) by unwonted verdure. Even the repulsive "sage plains" and "grease wood" flats, so monotonous and forbidding to the ordinary traveller, yielded up unexpected treasures of rare plants. Among these the evanescent annuals were in great profusion, including *Cleome aurea* Hook., *Calyptridium roseum* S. Watson, *Oenothera Andina* Nutt., *Oenothera scapoidea* Nutt., *Astragalus Geyeri* Gray, *Astragalus pictus* Gray, *Chaenactis Douglasii* H. & A., *Plantago Patagonica* Jacq., *Gilia inconspicua* Dougl., and *Oxytheca dendroidea* Nutt. In the moist grassy valley of Little Sandy were also found quite abundantly *Capsella divaricata* Walp. and *Gentiana humilis* Stev., heretofore overlooked by collectors in this region.

Of perennial plants, serving somewhat to relieve the prevalent and monotonous growth of *Artemisia*, *Tetradymia* and *Linosyris*, comprising what is popularly known as "wild sage," and the equally forbidding Chenopodiaceous shrubs confounded under the common term of "grease-wood," may be noted several species of *Astragalus* including *A. Purshii* Dougl., *A. lotiflorus* Hook, *A. glareosus* Dougl., *A. junceus* Nutt., and now collected for the first time since Nuttall's original discovery, *A. pubentissimus* Nutt. and *A. flavus* Nutt., the former a not uncommon roadside plant, and the latter quite abundant along the margins of dry water-courses, at the foot of steep clay buttes.

On gravelly knolls adjoining Green River still another inter-

esting Nuttallian plant was rediscovered, *Tanacetum Nuttallii* Torr. & Gray, and growing in close proximity with this was found *Vesicaria Alpina* Nutt., both probably near the original station of Nuttall.

Nearly everywhere over this district in exposed situations we meet with *Eriogonum ovalifolium* Nutt., forming dense silvery cushions, its close globular heads of flowers exhibiting a great variety of tints from pure white to dark brown. Almost equally abundant on gravelly slopes also occur *Aplopappus acaulis* Gray, and *Astragalus simplicifolius* Gray, presenting a neat contrast of colors in their bright yellow and blue flowers, resting in mats of dark green and silvery foliage.

Quite constantly associated in growth with *Astragalus flavus* Nutt. is a showy asteroid plant with large white flowers, disposed in flattened summits surmounting the dull colored tomentose leaves. This plant, according to Dr. Gray, is closely allied to or perhaps identical with the *Xylorhiza villosa* Nutt. (*Aster Xylorhiza* Torr. & Gray). In view of the discrepancy in many respects between this plant and that described by Nuttall, Dr. Gray has thought proper to characterize it as a new species, *Aster Parryi*.

Among other plants worthy of note in this district may be enumerated *Delphinium Menziesii* DC., *Sisymbrium junceum* Bieb., *Viola Nuttallii* Pursh, *Cymopterus montanus* Nutt., *Cymopterus Fendleri* Gray, *Antennaria dimorpha* Nutt., *Artemisia pedatifida* Nutt., *Phlox longifolia* Nutt., *Phlox canescens* Torr. & Gray, *Castilleja parviflora* Bong., *Pentstemon humilis* Nutt., and *Gilia pungens* Benth.

On reaching the higher ground forming the eastern rim of the Green River basin, which leads by an easy pass, at an average elevation of seven thousand feet above the sea level, from the Pacific to the Atlantic slope, the prevalent desert growth gives place to a vegetation partaking of a sub-alpine character. This district comprises the botanical localities designated by Nuttall as "dry and lofty hills in the central range of the Rocky Mountains."

Here accordingly we again come within the range of these early discoveries in re-collecting such choice plants as *Draba Alpina* L., var. *densifolia*, *Lepidium montanum* Nutt., *Trifolium Andinum* Nutt., *Trifolium gymnocarpon* Nutt., *Astragalus campestris* Gray, *Oxytropis lagopus* Nutt., and *Phlox bryoides* Nutt.

Here also we meet for the first time, probably near its southeastern limits, the interesting *Lewisia rediviva* Pursh. This

becomes much more abundant farther north in the Wind River valley, and we were thus afforded an opportunity to observe this plant through its flowering and fruiting stages, extending from the latter part of June to the middle of July. After this latter period its matured capsules are detached and blown away, leaving no trace of the plant exposed to view, till the following spring develops the rosette of radical leaves, by which the Indians are guided in procuring their supplies of this palatable and nutritious root. Recent attempts have been made to introduce this showy plant into our gardens, where it would prove quite an acquisition.

Shrubbery is here represented mainly by *Rosaceæ*, including *Amelanchier Canadensis* Torr. & Gray, *Potentilla fruticosa* L., *Purshii tridentata* DC., *Ribes cereum* Dougl., but we look in vain, in apparently favorable localities, for the forms so well known in the mountain range farther south in Colorado of *Ribes deliciosus* Torr., *Cercocarpus parvifolius* Nutt., or *Jamesia Americana* Torr. & Gray.

The scanty pine growth includes chiefly *Pinus flexilis* James, with an occasional clump of *Abies Douglasii* Lindl., and *Juniperus Virginiana* L.

The southeastern spurs of the Wind River range present a succession of steep, grassy slopes agreeably interspersed with pine-clad ridges. Through numberless channels the mountain streams collect their summer tribute of melted snow, and cleave their way to the lower valleys through deep gorges, disclosing in steep mural faces the structure and succession of the underlying, highly inclined, rocky strata. The lower undulating slopes, forming the natural divides between the numerous watercourses tributary to the main valley of Wind River, form irregular ridges often presenting smooth tabled summits, bedded with rich grasses interspersed with gaily colored flowers. Conspicuous among the latter are the bright golden-yellow heads of *Balsamorhiza Hookeri* Nutt., and *Balsamorhiza sagittata* Nutt., growing promiscuously, the close similarity of their flowers being curiously contrasted with their diverse foliage; even in the latter case, however, a tendency to assimilate (perhaps due to hybridization) is occasionally observed, in which the sharply hastate leaves of the latter species are irregularly gashed to resemble forms of the other. Besides these everywhere obtrusive forms, we may also note as characteristic of this district *Geranium Fremontii* Torr., *Arenaria congesta* Nutt., *Arenaria Hookeri* Nutt., *Astragalus campestris* Gray, *Oxy-*

*tropis campestris* L., *Lupinus sericeus* Pursh, *Hedysarum Mackenzii* Rich., *Eriogonum flavum* Nutt., and *Calochortus Gunnisoni* Watson. On all the high rocky ridges of this section a charming variety of *Phlox Douglasii* Hook. is met with, forming close, flattened cushions, and a profusion of pure porcelain-white fragrant flowers.

Along the borders of streams, with the prevalent willow growth, we find *Betula occidentalis* Hook., *Alnus incana* Willd., and in the larger valleys *Elæagnus argenteus* Nutt.

On the steeper mountain slopes, before alluded to as presenting an agreeable alternation of meadow and woodland, the smooth grassy expanses of the higher elevations, reaching an altitude of nine thousand feet above the sea level, reveal a distinctly subalpine vegetation. We accordingly here encounter such well known forms as *Saxifraga nivalis* L., *Eritrichium aretioides* DC., *Polemonium confertum* Gray, *Lloydia serotina* Reich., while apparently more distinctly characteristic of this particular range we note *Townsendia spathulata* Nutt., *Townsendia scapigera* D. C. Eaton and *Bupleurum ranunculoides* L.

In the wooded districts *Pinus flexilis* is irregularly mingled with *Pinus ponderosa* and *Abies Douglasii*, while *Pinus contorta* forms the almost exclusive growth of the interior ridges and alpine valleys. After passing the first series of steep ridges, which generally present an abrupt escarpment towards the main axis of the range, the interior valleys are spread out in the form of irregular basins, bordered by deep pine woods. Within these timbered recesses we occasionally encounter small grassy parks, or alpine bogs occupied by a close, clumpy growth of willows. Through these, course clear mountain streams generally hidden from view by overhanging vegetation. During the season of melting snow in the early summer months, these meadows frequently conceal treacherous bogs greatly impeding travel, while small ponds and occasional permanent lakes are not infrequent. In this variety of surface exposure, limited in every direction by irregular, rocky ridges, variously set off with extensive snow drifts, we have all the conditions of a most attractive mountain flora.

We accordingly find here in somewhat confused association the following plants:—*Draba Alpina* L., *Lupinus cæspitosus* Nutt., *Hedysarum boreale* Nutt., *Astragalus Alpinus* L., *Oxytropis campestris* L., *Oxytropis viscida* Nutt.? (or a species near it), *Sedum stenopetalum* Ph., *Sedum rhodanthum* Gray, *Actinella grandiflora*

T. & G., *Antennaria dioica* L., *Senecio lugens* Rich., *Kalmia glauca* L., *Synthyris plantaginea* Benth., *Mertensia paniculata* Dougl., *Gilia nudicaulis* Gray, *Androsace septentrionalis* L., *Primula Parryi* Gray, *Gentiana humilis* Stev., *Phacelia sericea* Gray.

In succeeding articles the flora of the Owl Creek range and of the high mountain district between the Big-Horn and Yellowstone basins will be noticed.

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## ANIMAL LIFE OF THE CUYAMACA MOUNTAINS.

BY DR. J. G. COOPER.

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WHEN collecting at San Diego Bay in the spring of 1862, I much regretted that the severe floods of that noted season so broke up the roads into the mountains, that I could not get up to them with the necessary materials for making a full collection of the animals and plants. I then supposed that the greater moisture and large forests of the mountains would favor the existence of numerous species as yet uncollected within the Union, if not entirely new. I was disappointed in not finding more of them near the coast, and attributed their absence to the barrenness of the country, and want of trees, essential to many species. I supposed also that some of the Mexican or Lower Californian species said to be found near the boundary must exist there.

My late trip through the mountains, has, however, satisfied me that the animals, like the plants, are comparatively few in species, and mostly of northern forms. It is possible that, somewhat later, stragglers from Lower California might appear among birds and insects, but I was then so near the end of the spring migration, in this latitude, that no common visitors are likely to have escaped notice. As to the non-migratory animals, they have evidently been rendered very scarce by the want of water over most of the range, even in early spring and in an average rainy year like the past. Those that drink could find water in the fall only at intervals of ten to twenty miles, where they must fall an easy prey to the Indians who live at these localities.

The birds, reptiles, insects and mollusca, are however less dependent on a water supply than mammals, as the former can obtain